A Measurement Model of Students' Behavioral Intentions to Use Second Life Virtual Environments

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Applying the Theory of Reasoned Action, this paper presents a survey instrument that measures the correlation between students' attitudes and their behavior intention to use Second Life virtual environments. One hundred and sixty-two library and information science students were introduced to Second Life virtual environments during a face-to-face training session and completed a survey instrument afterward. The survey yielded a Cronbach alpha of 0.95, indicating a high reliability test score. Factor loadings for *attitude* and *behavior intention* were 76.54% and 56.02%, respectively, suggesting robust construct validity. The correlation coefficient between latent variables *attitude* and *behavior intention* was 0.54. This paper suggests approaches to motivate student intentions to use Second Life in higher education.

Keywords: attitude, behavior intention, Second Life, structural equation modeling, virtual world

Introduction

The use of Second Life (SL) in LIS education has been discussed intensively in recent years. A thread of more than 30 postings on this topic appeared in jESSE, the primary listserv for library and information science educators, from October 1 to November 13, 2008. A growing number of SL social events have been posted to jESSE since 2009. Launched in 2003, SL is a virtual environment where more than one million Internet users have created 3D avatars and participated in interactive online communities (Blumenstein & Oder, 2007; Urban, 2007). Such a virtual environment enables multiple simultaneous users to access virtual contexts, interact with digital artifacts, represent themselves through avatars, communicate with other participants and computer-based agents, and engage in collaborative learning activities (Dede, Ketelhut, & Ruess, 2000).

3D computer games have become one of the most prominent entertainment media in recent years. The Entertainment Software Association (2008) reported sixty-five percent of American households play computer or video games, and U.S. computer and video game software sales grew six percent in 2007 to $9.5 billion. Although Second Life shares commonalities with 3D avatar games, it is unique in that the virtual environment is created completely by its users and reflects their real-life experiences.

Contrary to the success of 3D games, SL virtual environments have been used infrequently by educators and SL has not been widely adopted by public libraries. Heilesen (2009) reported a Danish virtual library project was not adopted by any of the three user groups, including super user project members, library professionals, and library users in general. This may be due to the attitude of rejection toward SL as a communication technology rather than a rejection of the specific virtual library concept. The success of a virtual learning environment depends on how well we understand users of this system. Hence, to understand the full potential of this market, it is essential to motivate students, faculty, and educational administra-

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tors to adopt this computer-mediated communication tool, particularly concerning the hardware required to run the software application. So far, studies on 3D virtual environments have focused on building digital imaging (Hastings, 2002), promoting multimodal reading literacy (Mackey, 2007a, 2007b), and using SL in specific educational settings (Kemp, 2008; Luo & Kemp, 2008).

SL is an innovation with potential use for educators and learners. According to Rogers (1995), the innovation-decision process involves five steps: (1) knowledge; (2) persuasion; (3) decision; (4) implementation; and (5) confirmation (p. 21). An attitudinal change toward a new innovation is among the most decisive factors related to its adoption, since individuals are persuaded to use such innovations after forming a favorable attitude.

A search against LIS databases found no previous publication describing a means to change a potential user's attitude, particularly behavior intention, toward adopting a SL virtual environment. Thus, it is necessary to create a measurement model to assess distance learners' attitudes toward such environments and to assess pertinent factors that may influence their behavior intention to participate in SL learning activities. Behavior intention is defined here as the cognitive representation of a person's readiness to perform a given action.

To increase students' behavior intention to use SL, as a first step, this author proposed a measurement model to estimate how students' attitudes influence their behavior intention. The long-term goal is to help library educators build virtual learning communities in such a way that they can better serve individual educational needs. The theoretical framework on behavior intention was based on the Theory of Reasoned Action (Fishbein & Ajzen, 1975). The Theory of Reasoned Action (TRA) suggests that a person's *behavior intention* depends on the person's *attitude* about the behavior and on *subjective norms,* or the level of influence others' opinions are likely to have on the person's actions. There have been studies in LIS education that applied TRA. For example, Thornburg and Pryor (1998) found the difference between positive and negative intentions to participate in LIS continuing education was determined nearly entirely by attitude. They believed attitudinal differences were determined by strength of belief concerning the projected outcomes of participating.

This study explored the following research questions:

1. How can one reliably measure LIS students' *attitudes* about using Second Life?
2. How can one reliably measure LIS students' *behavior intention* concerning their using Second Life?
3. To what extent can LIS students' *attitudes* toward Second Life influence their *behavior intention* to use it?

Review of Previous Studies

Attitude toward Behavior Intention

Ajzen and Fishbein (1980, p. 54) suggested a person's *attitude* toward performing a behavior is simply the person's general feeling of favorableness or unfavorableness toward that concept. One could use scaling procedures to measure a person's attitude. The measure of attitude often results in a single score which represents a given person's general evaluation or overall feeling of favorableness or unfavorableness toward the behavior in question.

Intention in this paper is a concept that measures how an individual intends to use a technology system on the job (Davis, 1989; Davis & Venkatesh, 1996; Lederer, Maupin, Sens, & Zhuang, 2000; Morris & Dillon, 1997). *Intention* can be measured by giving alternatives to an individual and asking which alternatives he/she prefers to perform (Ajzen & Fishbein, 1980, p. 41). The measurement of *intention* can be

of either single-action criteria (how a person will most likely perform an action), or multiple-choice criteria (vote for presidential election).

Researchers in social and behavioral sciences suggested a correlation between attitude and behavior intention. Fishbein and Ajzen (1975) first formulated the Theory of Reasoned Action (TRA) which has been applied in numerous studies in the social sciences. According to TRA, *behavior intention* is the cognitive representation of a person's readiness to perform a given action. Intention is the best predictor of behavior. Intention is determined by three things: (1) a person's *attitude* toward a specific behavior; (2) their *subjective norms*; and (3) their perceived *behavioral control*. Intention is believed to be a good indicator to action, but it will not necessarily lead to real action. For example, intention to quit smoking is an indicator, not the act of real quitting. Sheppard, Hartwick, and Warshaw (1988) conducted meta-analysis and found the correlation between *attitude* and *subjective norm* to *behavior intention* was 0.66. This correlation is based on 87 separate studies with a total sample of 12,624 and is significant at the 0.001 level (p. 336). There is a good amount of research available on the measurement of behavior and intention (Davis, 1989; Davis & Venkatesh, 1996; Feldman & Lynch, 1988; Morris & Dillon, 1997; Lederer, Maupin, Sens, & Zhuang, 2000).

The theories on the relationship between attitude and intention have been applied to promoting new products, innovations or assessing the usability of computer interfaces. For example, TRA can be used to estimate whether potential users will accept an idea or behave in an expected way. TRA was further developed by Davis (1989) as the Technology Acceptance Model and also has been used in LIS research (Davis, Bogozzi, & Warshaw, 1989; Heinrichs, Lim, Lim, & Spangenberg, 2007; Hu, Lin, & Chen, 2005; Morris & Dillon, 1997). Ajzen (1985) further created Theory of Planned Behavior based on TRA. Both the Technology Acceptance Model and Theory of Planned Behavior emphasize the adoption of new innovation or products (Chu, Hsiao, Lee, & Chena, 2004; Hung, Chang, & Yu, 2006; Lin, Chan, & Wei, 2006).

Student Learning in Virtual Environments

Using SL as an educational tool dates back to previous research on multiple user virtual environments (MUVE). Based on a project funded by the National Science Foundation, Dede, Ketelhut, and Ruess (2000) explored usability and design characteristics of virtual environments and the impact on middle school students' motivation and educational outcomes. MUVE can create authentic, situated, and distributed 3D learning experiences, and contributed to the following areas in education: distance education courses for graduate students, collaboration, online teacher development, and scientific literacy (Dieterle & Clarke, 2008).

Another approach to the study of virtual environments focused on user studies in gaming. LIS researchers reported user information needs, user hesitancy, and gender differences toward gaming. For example, Agosto (2004) reviewed practices and research on girls and gaming in information service and found that most games portray a negative image of females, projecting weak and victimized characters. She also found girls prefer collaborative games and the educational value of games over competition and violence. Kiili (2005) suggested that digital games can provide an engaging experience for students and proposed an experiential gaming model, a derivative of Kolb's (1984) experiential learning theory. This model may motivate players through direct experiences with the game world. More recently, Mackey (2007a) described how "multimodal readers" develop other mental, motor, and kinesthetic abilities and skills, often resulting from various computer games. She sug-

gested the relationship between reading literacy and game playing as involving engagement with pictures and sounds, when performed in hypertexting, Web surfing, and game playing. All these studies suggested the importance of virtual environments in enhancing student learning.

Second Life and Education

In recent years, virtual communities such as SL have been used in education. Hew and Cheung (2010) reviewed the education literature on SL and found 11 empirical research papers covering topics in the affective domain (attitude and satisfaction), 4 on learning outcomes and 5 on social interaction. In most cases a course from a particular discipline was assessed, for example English as Second Language (Wang, Song, Stone, & Yan, 2009), information systems (Dreher, Reiners, Dreher, & Dreher, 2009), communications (Jarmon, Traphagan, Mayrath, & Trivedi, 2009), and social interaction (Warburton, 2009).

LIS educators are among the first to experiment with SL in higher education and they have formulated active collaboration groups and knowledge-sharing platforms (Jarmon & Sanchez, 2008). LIS courses on SL provide platforms for project work, service learning, and reflective writing (Kemp, 2008). Luo and Kemp (2008) surveyed faculty responses to the use of SL. They suggested that the advantages include: simulation of face-to-face interaction, spatial simulation, and functional simulation of the real world. Sanchez (2009c) suggested that SL participants can build something completely new in the virtual lands, which may inspire students' sense of creativity. He encouraged library staff to use SL for professional development and networking (p. 35). SL virtual environment makes digital story-telling, role-playing, and community engagement possible (Sanchez, 2009b). It "allows distance education students to work in geospatially distant teams" for service learning projects (p. 177). Czarnecki (2008) reported a public library project on the Teen Second Life and recommended librarians acquire skills on creating stories through movie making in SL. Fetscherin and Lattemann (2007) administered a survey on technological acceptance of virtual communities to 250 users of SL and found 70% believed SL improves both collaboration and communication.

Librarians are also pioneers in adopting SL virtual environment in education, including information literacy instruction (Davis & Smith, 2009), volunteering in virtual reference desks (Sweeney, 2008), and cultivating collection and partnership (Hedreen et al., 2008; Swanson, 2007). However, the literature clearly suggests that library managers are not convinced SL can help library services; some pioneers proposed that library services may expand to new territories when library users, including LIS students, feel a sense of community support from the virtual world (Erdman, 2007; Hildreth, 2007; Hurst-Wahl, 2007). Library consortiums such as the Alliance for Libraries provide services and technical support on building virtual libraries in SL. Stimpson (2009) surveyed the public library's presence in SL and reported potential benefits of engaging popular culture and outreaching to younger users. However, it is notable that most of these projects are in initial stages in individual libraries and large-scale library user participation has not been reported.

Some information professionals suspect how large an impact this virtual community could have, and many suggest further collaborative research on virtual communities to discover what can be done to meet individual needs and better serve users (Grassian & Trueman, 2007; Herring, 2007). In order to advance the research and promote the use of virtual environments in education as well as library services, there is a need for a reliable and valid survey instrument for educators to understand user behavior intention to utilize virtual environments. Previous studies may lead to a theoretical

framework to build an instrument to assess the impact of attitude toward behavior intention. Such measurement tools may help to collect quantitative data that could be used to convince educational administrators and library managers to consider allocating more resources in this area.

Research Method

This study surveyed master's level LIS graduate students at a southwestern state university. Participants were distance learning students gathering for face-to-face orientation sessions in the summer and fall semesters in 2008.

Students were given only 15 minutes to participate in the training session, due to their obligation to school-related events in the schedule. The author recognized the limitation of a one-time session. The research questions in this study focused on students' behavior intention to use SL. It is the author's belief that this session served this purpose. This paper did not address how effectively SL can influence actual learning outcomes. Further studies with longer, more interactive training sessions are needed to investigate the efficiency of SL in student learning.

The content of the 15-minute training session was adopted from the Second Life Activity Rubric by Global Kids (Global Kids, 2007; see also Atkinson, 2009). The session demonstrated beginning and intermediate activities, such as changing the appearance of avatars, walking, flying, sitting, chatting with other avatars, as well as teleporting to some information agencies such as ALA Information Island and virtual library reference desks.

After the session, students completed a follow-up survey on their attitude and intention to use SL. The survey was paper-based and the return rate is more than 95%. The survey was based on Fishbein & Ajzen's (1975) TRA. Question 1–10 were related to the construct *attitude*. The author chose and adapted questions from previous studies by Chau (1996) and by Burton-Jones and Hubona (2005). Questions 11–15 were related to *behavior intention* to use SL and were adapted from Davis (1989) and Davis, Bogozzi, and Warshaw (1989). The author also conducted factor analyses for both question sets to estimate the construct validity. The full instrument is attached as appendix A.

The survey also included an open-ended question to collect comments. The author used an SPSS statistical package to test the reliability and validity of the instrument. LISREL 8.8 software was used to illustrate a structural model of the relationships among measured and latent variables the data represented. Latent variables, or factors, are not directly measured, but are inferred from test scores. They reflect the construct validity of a test. Powell (1997) suggested a continuum of LIS research scenarios from concepts, or abstractions from observed events or a variety of facts, to constructs, which signifies phenomena such as "attitudes, perceptions, roles, etc." (p. 32). It is noteworthy that data from this article may be generalized only to the local student population, and caution should be given to drawing inferences concerning a larger student body. However, the data framed a quantitative measurement model, which may enable future researchers to collect comparable data and make valuable conclusions.

Results

Descriptive Statistics

One hundred and sixty-two students participated in this study. Among them, 15 were male and 147 were female. Eighty-eight percent of them (142) had never used SL before, and only two students had used it often. Forty-seven percent were aged 35 or younger, and 36% were between 36 and 45, while the remaining 17% were 46 years or older. Table 1 lists descriptive statistics on question items related to participants' *attitudes* toward SL.

From Table 1, it can be shown that the

Table 1: Descriptive Statistics on Attitudes toward SL.

Question Items	Mean	SD	Skewness	Kurtosis
SL gives me control over my work	2.52	1.10	–0.05	–0.76
SL improves my job performance	2.57	1.10	–0.05	–0.88
SL addresses my job-related needs	2.65	1.12	0.03	–0.85
SL saves my time	2.56	1.25	0.35	–0.83
SL enables me to accomplish tasks quickly	2.57	1.16	0.11	–0.90
SL reduces the time I spend on unproductive tasks	2.37	1.15	0.37	–0.79
SL enhances my effectiveness on the job	2.63	1.11	0.08	–0.84
SL improves the quality of the work I do	2.70	1.06	–0.34	–0.86
SL improves my productivity	2.67	1.15	–0.08	–0.93
SL makes it easier to do my job	2.65	1.12	–0.12	–0.98
Overall, SL is useful in my job	2.75	1.21	–0.09	–1.08

Note: $N = 162$. 1 = least likely, and 5 = most likely

data achieved a normal distribution, with skewness, and kurtosis values between –1 and 1. Most of the students did not agree that SL helps them perform individual tasks more efficiently. All of the question items were ranked below 3, in a 1 to 5 scale (1 = least likely, and 5 = most likely). Table 2 illustrates students' *behavior intention* to use SL.

Table 2 suggests near neutral answers on students' behavior intention to use SL. However, students tended to agree that SL is more competitive than other communication and learning tools, such as chat, discussion boards, and multimedia online classrooms. This author believes that students unfamiliar with SL might have contributed a moderate negative attitude toward SL, however, a slight positive interest toward SL suggests an even more likely desire for the use of such virtual environments in LIS education.

Factor Analysis

A User Attitude Survey yielded a Cronbach alpha score of 0.95, indicating a plausible reliability score. Factor loadings for *attitude* and *behavior intention* were 76.54% and 54.02%, respectively, suggesting robust construct validity. Figure 1 illustrates the scree plot of 11 question items on *attitude*.

The scree plot in Figure 1 clearly demonstrates that there was only one factor (*attitude* toward SL) with an Eigenvalue greater than 1. The same dataset was processed using LISREL 8.8 software. The path diagram is shown in Figure 2.

Figure 2 illustrates a structural relationship between *attitude* and *behavior intention* to use SL. From the left side of Figure 2, it is evident that the measurement error of each question item is relatively low (ranging from 0.14 to 0.56) and that there is a strong correlation coefficient (Gamma = 0.54) between latent variables *attitude* and *behavior intention*. A Gamma value is similar to Pearson's r correlation coefficient. Cohen (1988) stated that a correlation of 0.30 or bigger in social science is considered strong. The figures suggest a

Table 2: Descriptive Statistics on behavior intention to Use of SL.

Question Items	Mean	SD	Skewness	Kurtosis
Satisfied with SL	2.95	0.96	–0.46	–0.10
Ease to use SL	3.19	0.87	–0.31	0.73
Competitiveness vs. other learning tools	3.52	0.73	–0.98	–0.16
Chance to use SL	3.08	0.83	–0.87	0.49

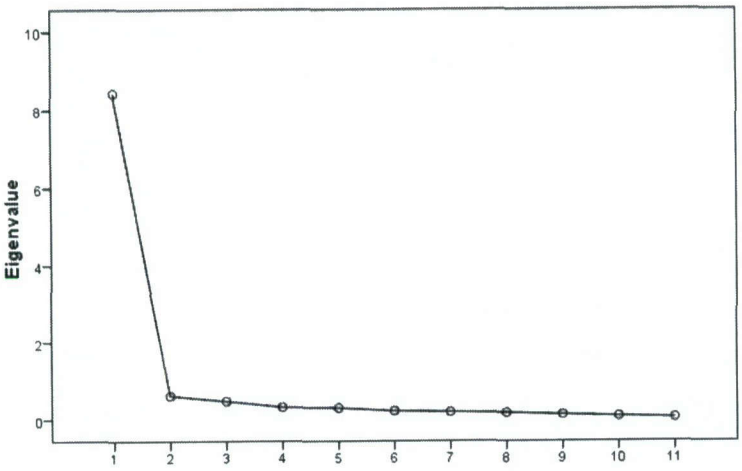

Figure 1. Scree plot for attitudes toward Second Life.

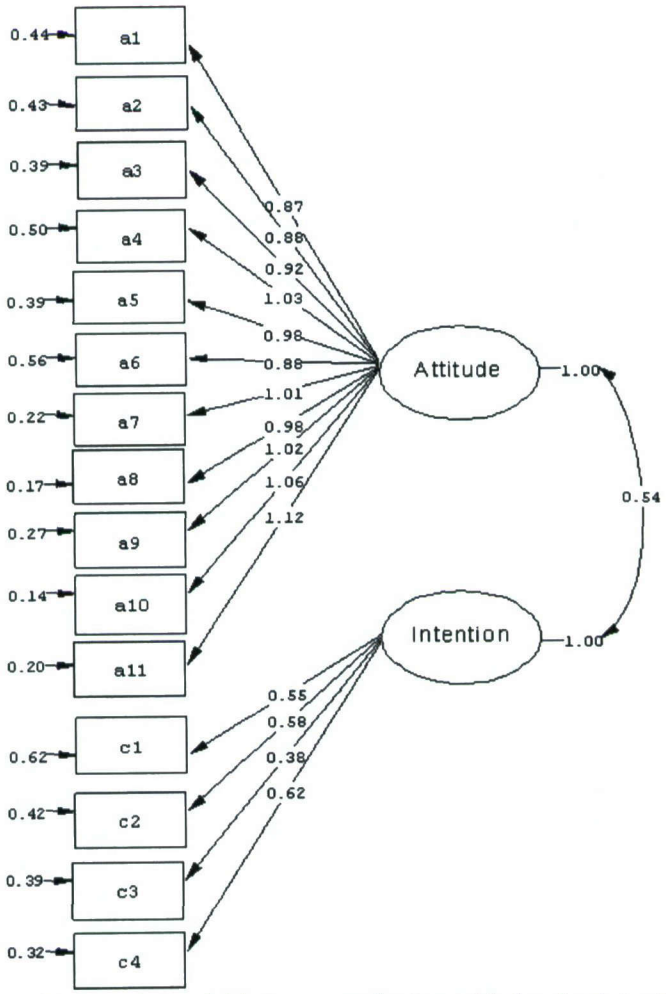

Figure 2. A path model between attitude and behavior intention.

plausible measurement model to estimate LIS students' *attitude* and *behavior intention* to use SL.

Content Analysis

This author also analyzed participants' comments and categorized them using content analysis. These comments can be summarized into two categories: *positive and negative* attitudes toward the use of SL. Some students expressed a *positive* attitude toward SL and submitted remarks such as "Second Life would be useful in interactions with distance learning students in writing centers and libraries," "Maybe in the future, students could create environments themselves and walk around a virtual village, and sit for coffee," "I think it would be a fun way to use my creative energy while promoting our library at the same time. However, I would like it so much that I would not want to do my other tasks. I am very compulsive about activities I enjoy." Some student had *negative* sentiments about the usefulness as represented in the following statements: "A lot of the work I do is hands on and it would be difficult to do in Second Life," "I am an elementary school librarian and do not see any application for this age group," "I answer these as a working student, not as a teacher within the Second Life system," and "It would just take some practice to get used to it (I'm a little older and not quite as computer literate as students just out of college)."

Discussion and Implications

The goal of this paper is to engender a *behavior intention* to use SL. If there were no users, library services and education in a virtual environment would not sustain or transfer to other 3D applications. There are different 3D MUVE applications of which, thus far, SL has arguably the largest user group, and it is still growing. SL provides a platform from which users can borrow from their real life experiences and use the tool to represent the first life experience. Objects such as library buildings, shops, and lecture halls in SL are reflections of personal information infrastructures (Marchionini, 1995) from real world knowledge, acquired from real work, and may, in turn, influence real world environments.

Lack of intention to use SL is among one of the barriers that may prevent its further use in LIS education. Sanchez (2009a) identified learning curves, technical difficulties, and time-consumption in using SL (p. 31). None of the current SL educational and library presences was designed using the same competitive mechanism often seen in computer and online games. For example, computer game players who achieve a task will often be awarded with points and therefore enforce the intention for repeated play. This is not the case in SL in education, where libraries and virtual campuses often merely simulate the daily-operations in brick and wall buildings within a non-competitive environment.

Gender may have played a role in the lack of interest of using SL virtual environment, since most of the participants in this study were female. Agosto (2004) found that girls face difficulty when playing games. Similarly, female-dominant library professionals might find extra barriers when engaging in a 3D gaming environment such as SL. SL as an educational platform is in its initial stages, and further research is needed to motivate the use of 3D virtual environments, particularly among female students, in LIS education.

Unlike other locally maintained educational software such as Blackboard, Moodle, and Sakai, currently, all lands in SL are maintained by Linden Lab, and this is an implausible business model for full-scale use by individual institutions. However, a 3D learning environment provides a new model for LIS educators to deliver courses to better fit individual student needs.

The advantage of SL is that all characters are created by the users themselves rather than by game-designers. Potential

uses in LIS include simulation of digital story-telling, role-playing, and reference interviews. SL has been used as a popular meeting place for the American Library Association's virtual conferences, and it might even be used for fund-raising events in the near future by individual institutions.

Conclusion

This project suggested that the TRA provides a plausible theoretical foundation by which to estimate students' *attitude* and *behavior intention* to use SL. The data supported a very robust measurement tool for future efforts to encourage increased use of SL. The questions yielded reliable results, and factor analysis suggested satisfactory construct validity. The data also indicated a moderate correlation between *attitude* and *behavior intention* to use SL. This study indicated that most LIS students still need to be motivated to use SL. Moreover, the presence of library services in a virtual environment may bridge the gap between users' information needs and the lack of information services in their immediate environments. An essential ingredient to the success of some social-networking sites such as SL is the ability to build a sense of community in virtual lands. The sense of community is critical to today's distributed learning environments, where students often feel isolated when they cannot observe instructors, listen to live lectures, and closely observe class demonstrations. SL may provide positive effects on learning, especially when it simulates an interactive, real life environment that most Web-based learning environments lack.

The path model from this paper reveals how to measure students' attitude and behavior intention to use SL. SL provides a tool that may help us train our library school students to better relate with the next generation of library users who are highly computer savvy. To better the practice of teaching and learning, it would be more efficient to adopt an attitudinal instruction model for course design. According to Kamradt and Kamradt (1999, p. 586), attitudinal instruction addresses three domains of learning: (1) affective; (2) cognitive; and (3) psychomotor. Specifically, course design using SL may address the following questions:

1. How does using this approach make students feel (affective learning)?
2. Why does this approach make sense to students (cognitive learning)?
3. What do students actually do in this situation (psychomotor)?

Covering these three areas of learning related to attitude changes will likely help library educators build virtual learning communities or motivate graduates to use SL in schools, academia, public libraries and information agencies. In this way, LIS graduates will learn more than just a passing knowledge and current library related technology but they will "think" from within a technology driven world to which children today are becoming adapted. However, further studies are needed to confirm the validity of this model in LIS instructional design.

Two limitations of this study are the relatively small sample size and that fact that there was no random-sampling process during the survey. The results of this sampling process may not be generalized to different populations. Another limitation was that the *behavior intention* measure was not equal to an individual's actual use or how such use can enhance his or her academic performance. Actual use is likely determined not only by *behavior intention*, but by a variety of other factors. Further study is needed to assess how to encourage the use of SL and how SL experience can actually influence a learner's real-world performance. Hence, follow-up studies need to focus on individuals' needs in using the system, particularly those in problem-solving environments.

As a first step to understanding human

behaviors related to using SL, this study evaluated a measurement tool on *attitude* and *behavior intention* toward SL in normal classroom settings. One important concept—*subjective norm* of the user's situation—was not considered in this study. Subjective norm is "a person's belief that specific individuals or groups think he/she should or should not perform a behavior and his/her motivation to comply with the specific referents" (Ajzen & Fishbein, 1980, p. 8).

As SL grows more popular in classroom settings within LIS education, it will become necessary to fully include subjective norm into further study and estimate the predictive power of attitude and subjective norm toward behavior intention. Future studies may investigate whether LIS students will be more likely to adopt SL if their peers are using this platform. Researchers can ask questions such as "Given XXX school already uses SL in classrooms, would you be interested in adding SL to your class activities?" in these studies.

There is a need to seek administrative support and change educational stakeholders' attitude toward the use of SL in educational settings. It is expected in the future that more LIS educators could use SL to better fulfill individual needs and potentially enhance both teaching and learning effectiveness. Library practitioners may also use this communication tool to reach a broader audience in their communities.

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Appendix—Attitude and Intention to Use Second Life

Section A. User Attitude Toward SL
(1 = least like you, 5 = most like you)

1. Using Second Life would give me greater control over my work.
   1 2 3 4 5
2. Using Second Life would improve my job performance.
   1 2 3 4 5
3. Second Life would address my job-related needs.
   1 2 3 4 5
4. Using Second Life would save my time.
   1 2 3 4 5
5. Second Life would enable me to accomplish tasks more quickly.
   1 2 3 4 5
6. Using Second Life would reduce the time I spend on unproductive activities.
   1 2 3 4 5
7. Using Second Life would enhance my effectiveness on the job.
   1 2 3 4 5
8. Using Second Life would improve the quality of the work I do.
   1 2 3 4 5
9. Using Second Life would increase my productivity.
   1 2 3 4 5
10. Using Second Life would make it easier to do my job.
    1 2 3 4 5
11. Overall, I would find Second Life resource useful in my job.
    1 2 3 4 5
12. Additional comments (Open-ended question):

Section B. Intention to use Second Life

1. If you used Second Life, how satisfied were you with your performance of the tasks/projects?

Mostly unsatisfied						Mostly satisfied
1	2	3	4	5	6	7

2. If you used Second Life, generally, you would think using Second Life is

Very hard						Very easy
1	2	3	4	5	6	7

3. If you used Second Life, comparing to other Web-based learning tools (Wimba, online chat, discussion boards), your overall evaluation to Second Life would be

Mostly uncompetitive						Mostly competitive
1	2	3	4	5	6	7

4. Your chance to using Second Life again would be

Very unlikely						Very likely
1	2	3	4	5	6	7

5. Additional comments (open-end question)

Section C. Demographic Information

1. What is your gender?
   a. Male
   b. Female

2. Have you used Second Life before?
   a. Never
   b. Seldom
   c. Occasionally
   d. Often
   e. Very often

3. How many LIS courses have you completed?
   a. None
   b. 1–3
   c. 4–6
   d. 7–9
   e. 10 or more

4. What is your age?
   a. Under 18
   b. 18–35
   c. 36–45
   d. 46–55
   e. 56 or older

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